

Remarks

Claims 1-41 are pending in the application, with claims 1, 11, 20, 27, 30, and 38 being the independent claims. Independent claims 20, 27, 30, and 38 were amended in response to the current Office Action. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

On page 2, the current Office Action states that claims 1-41 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 6,285,779 to Lapidous *et al.* (hereinafter "Lapidous") in view of "MIPS R4000 Microprocessor User's Manual" by J. Heinrich (hereinafter "Heinrich"). Applicants respectfully traverse this rejection. Based on the remarks set forth below, Applicants respectfully request that this rejection be reconsidered and withdrawn.

The current Office Action states that Lapidous discloses the claimed features of Applicants' invention with respect to all independent claims 1, 11, 20, 27, 30, and 38, except that Lapidous does not explicitly disclose the processing of floating point compare operations. The Office Action further states that the processing of floating point compare operations are taught by Heinrich. Applicants respectfully disagree.

As stated on page 3 of the Office Action, Heinrich teaches floating point compare operations and the taking of absolute values. Applicant agrees with this point because floating point comparisons and the taking of absolute values are both operations known by those skilled in the art. However, Heinrich does not teach or suggest any motivation to use floating point magnitude compare operations in order to “perform a magnitude comparison between at least a portion of said plurality of transformed coordinates and a value representing a plurality of edges of a specified view volume, wherein comparison results for at least three view volume edges are obtained,” as claimed in independent claims 1 and 11, for example. Furthermore, the present invention uses a magnitude compare operation to achieve more efficient graphics-related processing. Heinrich neither teaches nor suggests any such advantage. Thus, for at least these reasons, Applicants submit that all of independent claims 1, 11, 20, 27, 30, and 38 and the claims depending therefrom are patentable over the cited documents.

On page 7, the current Office Action states the same rejection, further in view of U.S. Patent No. 6,298,365 to Dubey *et al* (hereinafter, “Dubey”). The current Office Action states on page 9 that “the combination of Lapidous and Heinrich do not specifically disclose that the floating point magnitude compare instruction takes two input values specified by the instruction and compares their absolute values using the compare condition specified in the instruction.” The Office Action further states that “such limitation is shown in the teaching of Dubey *et al.*” Applicants respectfully disagree.

Dubey does not teach or suggest a magnitude compare operation in which a single comparison is made, as is currently claimed in independent claims 1 and 11 as well as amended claims 20, 27, 30, and 38. As stated in the specification of the present invention on page 74, lines 5-9, the magnitude compare operation includes forcing the sign bit of

each operand to zero, subtracting the operands, and processing the difference according to a compare operation. Dubey, on the other hand, discloses a floating point magnitude comparison *function*, which involves multiple comparison tests, as depicted in Figure 4A. The number of comparisons necessary in Dubey teaches away from the simplicity achieved by the present invention. For at least this reason, Applicants submit that all independent claims 1, 11, 20, 27, 30, and 38 and the claims depending therefrom are patentable over the cited documents.

In addition, not only does Lapidous not disclose the processing of floating point compare operations, as stated on page 3 of the current Office Action, but Lapidous also does not compare transformed coordinates with view volume edges, as claimed in claims 1, 11, and 27. Instead, Lapidous discloses an improvement to a depth buffer that can be used with a visibility test comparison in which a new pixel depth is compared with a previous pixel depth at the same X,Y location. (See Lapidous, col. 1, lines 27-37.) In fact, Lapidous teaches away from the present invention in that the sign bit is "restored when the depth value is read for visibility test comparisons" (Lapidous, col. 16, lines 30-33), which implies that Lapidous uses the signed value (not the absolute value) to execute its visibility test comparisons. For at least this reason, Applicants submit that at least independent claims 1, 11, and 27 and the claims depending therefrom are patentable over the cited documents.

For at least the reasons stated above, Applicants submit that all independent claims 1, 11, 20, 27, 30, and 38 and the claims depending therefrom are patentable over the cited documents. Applicants therefore respectfully request that the Examiner reconsider and withdraw the rejection of claims 1-41.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all currently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

A handwritten signature in black ink, appearing to read 'MBR', enclosed within a large, loopy oval shape.

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